

Claims

- [c1] 1. A liquid wash heater for attachment to an engine exhaust system to heat liquid wash to clean a windshield, wherein said liquid wash heater comprises:
- a housing with a cavity located therein; and
 - a serpentine liquid wash tube at least partially contained within said cavity, wherein said serpentine liquid wash tube has an inlet and an outlet.
- [c2] 2. The liquid wash heater of Claim 1 wherein said housing further comprises a longitudinal transversely concave bottom recess for saddling an engine exhaust system pipe.
- [c3] 3. The liquid wash heater of Claim 1 wherein said liquid wash heater further comprises a filler material at least partially encompassing said serpentine liquid wash tube within said housing.
- [c4] 4. The liquid wash heater of Claim 1 wherein said liquid wash heater further comprises a pair of external connector fittings wherein one of said pair of external connector fittings is attached to each of said inlet and said outlet of the serpentine liquid wash tube.

- [c5] 5. The liquid wash heater of Claim 1 wherein said liquid wash heater is attached to said engine exhaust system pipe by a clamping means.
- [c6] 6. The liquid wash heater of Claim 5 wherein said clamping means is a band clamp.
- [c7] 7. The liquid wash heater of Claim 1 wherein the diameter of said serpentine liquid wash tube is less than or equal to one inch.
- [c8] 8. A liquid wash heater for attachment to an engine exhaust system to heat liquid wash to clean a windshield, wherein said liquid wash heater comprises:
- a housing with a cavity contained therein;
 - a curvilinear liquid wash tube at least partially contained within said cavity, wherein said curvilinear liquid wash tube has an inlet and an outlet; and
 - a filler material at least partially encompassing said curvilinear liquid wash tube within said housing.
- [c9] 9. The liquid wash heater of Claim 8 wherein said housing further comprises a longitudinal transversely concave bottom recess for saddling an engine exhaust system pipe.
- [c10] 10. The liquid wash heater of Claim 8 wherein said liquid

wash heater further comprises a pair of external connector fittings wherein one of said pair of external connector fittings is attached to each of said inlet and said outlet of the curvilinear liquid wash tube.

[c11] 11. The liquid wash heater of Claim 8 wherein said liquid wash heater is attached to said engine exhaust system pipe by a clamping means.

[c12] 12. The liquid wash heater of Claim 11 wherein said clamping means is a band clamp.

[c13] 13. The liquid wash heater of Claim 8 wherein the diameter of said curvilinear liquid wash tube is less than or equal to one inch.

[c14] 14. A liquid wash heater for attachment to an engine exhaust system to heat liquid wash to clean a windshield, wherein said liquid wash heater comprises:

a housing;

a nonlinear liquid wash tube at least partially contained within said housing, wherein said nonlinear liquid wash tube has an inlet and an outlet; and

a filler material at least partially encompassing said nonlinear liquid wash tube within said housing.

[c15] 15. The liquid wash heater of Claim 14 wherein said housing further comprises a longitudinal transversely

concave bottom recess for saddling an engine exhaust system pipe.

[c16] 16. The liquid wash heater of Claim 14 wherein said liquid wash heater further comprises a pair of external connector fittings wherein one of said pair of external connector fittings is attached to each of said inlet and said outlet of the nonlinear liquid wash tube.

[c17] 17. The liquid wash heater of Claim 14 wherein the diameter of said nonlinear liquid wash tube is less than or equal to one inch.

[c18] 18. A liquid wash heater for attachment to an engine exhaust system to heat liquid wash to clean a windshield, wherein said liquid wash heater comprises:

a housing; and

a flexible liquid wash tube at least partially contained within said housing, wherein said flexible liquid wash tube has an inlet and an outlet.

[c19] 19. The liquid wash heater of Claim 18 wherein said housing further comprises a longitudinal transversely concave bottom recess for saddling an engine exhaust system pipe.

[c20] 20. The liquid wash heater of Claim 18 wherein the diameter of said flexible liquid wash tube is less than or

equal to one inch.